

APPENDIX A: INITIAL REGULATORY FLEXIBILITY ANALYSIS

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),²⁵⁷ the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in this *Notice of Proposed Rule Making (Notice)*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Notice* provided in paragraph 124 of the item. The Commission will send a copy of this *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).²⁵⁸ In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register.²⁵⁹

A. Need for, and Objectives of, the Proposed Rules.

2. In this *Notice*, we examine methods to promote the development and growth of the in the 71-76 GHz, 81-86 GHz and 92-95 GHz bands to encourage the provisions of new technologies and services to the public and encourage the larger and more effective use of wireless in the public interest. We believe that this *Notice* will set the framework for the establishment of new wireless services in the 71-76 GHz, 81-86 GHz and 92-95 GHz bands.

3. We seek comment on the following issues under consideration in this *Notice*:

- Reallocating the 71-76 GHz, 81-86 GHz and 92-95 GHz bands in order to more fully comply with the allocations established at the World Administrative Radio Conference;
- Providing licensees in the 71-76 GHz and 81-86 GHz access to the entire spectrum to provide sufficient capacity for licensees to utilize and provide new innovative services to the public;
- Dividing the 92-95 GHz band into licensed use and unlicensed use in order to stimulate growth in the band while providing adequate protection to the Government operations in the band and to operations in the adjacent spectrum;
- Authorizing the 71-76 GHz, 81-86 GHz and portions of the 92-95 GHz under Part 101 of our Rules in order to facilitate investment capital for business;
- Whether to license the new services by geographic service areas or by site-by-site licensing;
- Licensing the spectrum to individual licensees and band managers to optimize the use of the spectrum and to provide maximum flexibility for potential licensees and new services;

²⁵⁷ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996, (SBREFA) Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

²⁵⁸ See 5 U.S.C. § 603(a).

²⁵⁹ See 5 U.S.C. § 603(a).

- Proposing open eligibility, rather than imposing eligibility restrictions, to allow market forces to guide license assignment absent a compelling showing that regulatory intervention to exclude potential participants is necessary;
- Adopting a 10-year license term and providing licensees with a renewal expectancy upon establishing substantial service in order to provide a stable regulatory environment that will be attractive to investors and will thus encourage development of the spectrum; and
- Allowing licensees to partition and disaggregate their spectrum to provide an opportunity for a wide range of applicants, including small business, rural telephone, minority-owned and women-owned applicants.

B. Legal Basis

4. The proposed action is authorized under Sections 4(i), 301, 302, 303(e), 303(f), 303(r), 304 and 307 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 301, 302, 303(e), 303(f), 303(r), 304, 307.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply.

5. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules.²⁶⁰ The RFA generally defines the term "small entity" as having the same meaning as the terms, "small business," "small organization," and "small governmental jurisdiction."²⁶¹ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.²⁶² A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.²⁶³ A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."²⁶⁴ Nationwide, as of 1992, there were approximately 275,801 small organizations.²⁶⁵

6. The Commission has not developed a definition of small entities applicable to Radio Frequency Equipment Manufacturers (RF Manufacturers). Therefore, the applicable definition of small

²⁶⁰ 5 U.S.C. § 603(b)(3).

²⁶¹ 5 U.S.C. § 601(6).

²⁶² 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

²⁶³ 15 U.S.C. § 632.

²⁶⁴ 5 U.S.C. § 601(4).

²⁶⁵ 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to Office of Advocacy of the U.S. Small Business Administration).

entity is the definition under the SBA rules applicable to manufacturers of "Radio and Television Broadcasting and Communications Equipment." According to the SBA's regulation, an RF manufacturer must have 750 or fewer employees in order to qualify as a small business.²⁶⁶ Census Bureau data indicates that there are 858 companies in the United States that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would be classified as small entities.²⁶⁷ Therefore, we believe that many of the companies that manufacture RF equipment may qualify as small entities.

7. The Commission has proposed to assign licenses in the 71-76 GHz, 81-86 GHz and 92-95 GHz bands by competitive bidding. The Commission has not yet determined how many licenses will be awarded. Moreover, the Commission does not know how many licensees will partition their license areas or disaggregate their spectrums, if partitioning and disaggregation are allowed.²⁶⁸ Therefore, the exact number of smaller licensees in these bands to which the proposed rules will apply cannot be known precisely at this time.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements.

8. Equipment designed for unlicensed use will be subject to the existing requirements of Subpart J of Part 2²⁶⁹ of our Rules, which governs equipment authorization procedures. In addition, winning bidders for licensed use must submit long-form license applications through the Universal Licensing System using FCC Form 601,²⁷⁰ and other appropriate forms.²⁷¹ Licensees will also be required to apply for an individual station license by filing FCC Form 601 for those individual stations that (1) require submission of an Environmental Assessment of the facilities under Section 1.1307 of our Rules;²⁷² (2) require international coordination of the application;²⁷³ or (3) require coordination with the Frequency Assignment Subcommittee (FAS) of the Interdepartment Radio Advisory Committee (IRAC). While these requirements are new with respect to potential licensees in the 71-76 GHz, 81-86 GHz and 92-95 GHz bands, the Commission has applied these requirements to licensees in other bands.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered.

9. The RFA requires an agency to describe any significant alternatives that it has considered in

²⁶⁶ See 13 C.F.R. § 121.201, NAICS Code 334220.

²⁶⁷ See U.S. Department of Commerce, 1992 Census of Transportation, Communications and Utilities (issued May 1995), NAICS category 334220.

²⁶⁸ See para. 91.

²⁶⁹ 47 C.F.R. §§ 2.901, 2.1093.

²⁷⁰ 47 C.F.R. § 1.913(a)(1).

²⁷¹ 47 C.F.R. § 1.2107.

²⁷² 47 C.F.R. § 1.1307.

²⁷³ See e.g., 47 C.F.R. § 1.928 (regarding frequency coordination arrangements between the U.S. and Canada).

reaching its proposed approach, which may include the following four alternatives: “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for such small entities; (3) the use of performance, rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.”²⁷⁴

10. We believe that the rules proposed in this *Notice* provide a flexible and efficient approach to spectrum management. To minimize any negative impact on smaller entities, however, we propose certain incentives for small entities that will be to their benefit. For example, we seek comment on licensing the spectrum to band managers that will be authorized to lease portions of their spectrum to all entities, including smaller entities, and to allow partitioning and spectrum disaggregation. These provisions will enable smaller entities, which sometimes may lack sufficient resources to bid in the auction on an equally competitive basis, to acquire smaller portions of the spectrum. The use of smaller licensing areas could also benefit small entities by reducing costs and build out expenses.

11. We also propose bidding credits for smaller entities that participate in auctions of licenses that are conducted pursuant to the rules proposed in this *Notice*. Specifically, we propose to define an “entrepreneur” as an entity with average annual gross revenues not exceeding \$40 million for three preceding years and we propose to define a “small business” as an entity with an average annual gross revenues not exceeding \$15 million for three preceding years. We believe that these small business definitions and bidding credits will help small entities compete in our auctions and acquire licenses.²⁷⁵

12. In addition, we propose to adopt a 10-year license term and provide licensees with a renewal expectancy upon establishing substantial service. We believe these provisions will provide a stable regulatory environment that will be attractive to investors and thus enable smaller entities to acquire the necessary capital to operate in the spectrum.

13. The regulatory burdens we have retained, such as filing applications on appropriate forms, are necessary in order to ensure that the public receives the benefits of innovative new services in a prompt and efficient manner and apply equally to large and small entities, thus without differential impact. We will continue to examine alternatives in the future with the objectives of eliminating unnecessary regulations and minimizing any significant impact on small entities.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rule.

15. None.

G. Ordering Clause

16. IT IS FURTHER ORDERED that the Commission’s Consumer & Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Notice for Proposed Rule Making*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

²⁷⁴ See 5 U.S.C. § 603(c).

²⁷⁵ Currently, these special small business size standards are being coordinated with the U.S. Small Business Administration.

APPENDIX B**PROPOSED DEFINITIONS AND RULES**

1. For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR Parts 2, 15, 97, and 101 as follows:

PART 2 -- FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

2. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

3. Section 2.106, the Table of Frequency Allocations, is amended as follows:

a. Revise pages 81 through 83.

b. In the list of International Footnotes, under I., revise footnotes 5.149, 5.556, and 5.561; and add footnotes 5.559A, 5.560A, 5.561A, and 5.562A.

c. In the list of United States (US) Footnotes, revise footnotes US211, US297, and US342; remove footnote US270; and add footnotes USwww, USxxx, USyyy, and USzzz.

The additions and revisions read as follows:

§ 2.106 Table of Frequency Allocations.

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65-94.1 GHz (EHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
65-66 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH			65-66 EARTH EXPLORATION-SATELLITE FIXED MOBILE except aeronautical mobile SPACE RESEARCH	65-66 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH	
5.547					
66-71 INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE			66-71 MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE	66-71 INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE	
5.554			5.554	5.554	
71-74 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)			71-74 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)		Fixed Microwave (101)
74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth)			74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Space research (space-to-Earth)	74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth)	
5.559A 5.561			US211 USwww USyyy	US211 USwww USyyy	
76-81 RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth)			76-81 RADIOLOCATION	76-77 RADIOLOCATION Amateur	RF Devices (15)
				77-77.5 RADIOLOCATION Amateur Amateur-satellite	Amateur (97)
				77.5-78 RADIOLOCATION AMATEUR AMATEUR-SATELLITE	

		78-81 RADIOLOCATION Amateur Amateur-satellite	
5.560	5.560	5.560	
81-84 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth)	81-84 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY USzzz Space research (space-to-Earth)		Fixed Microwave (101)
5.149 5.560A	US342		
84-86 FIXED FIXED-SATELLITE (Earth-to-space) 5.561A MOBILE RADIO ASTRONOMY	84-86 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY USzzz		
5.149	US342		
86-92 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	86-92 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)		
5.340	US246		
92-94 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION	92-94 FIXED MOBILE RADIO ASTRONOMY USzzz RADIOLOCATION		Fixed Microwave (101)
5.149	US342 USxxx		
94-94.1 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy	94-94.1 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio Astronomy	94-94.1 RADIOLOCATION Radio astronomy	
5.562 5.562A	5.562 5.562A	5.562A	

94.1-150 GHz (EHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
94.1-95 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149			94.1-95 FIXED MOBILE RADIO ASTRONOMY USzzz RADIOLOCATION US342 USxxx		Fixed Microwave (101)
95-100 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.554 S5.555			95-100 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.554		
100-102 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.341			100-102 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.341 US246		
102-105 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE S5.341			102-105 FIXED FIXED-SATELLITE (space-to-Earth) S5.341 US211		
105-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341			105-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) S5.341 US246		
116-119.98 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.341			116-119.98 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.341 US211 US263		

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INTERNATIONAL FOOTNOTES

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5.149 In making assignments to stations of other services to which the bands:

13360-13410 kHz,	4990-5000 MHz,	94.1-100 GHz,
25550-25670 kHz,	6650-6675.2 MHz,	102-109.5 GHz,
37.5-38.25 MHz,	10.6-10.68 GHz,	111.8-114.25 GHz,
73-74.6 MHz in Regions 1 and 3,	14.47-14.5 GHz,	128.33-128.59 GHz,
150.05-153 MHz in Region 1,	22.01-22.21 GHz,	129.23-129.49 GHz,
322-328.6 MHz,	22.21-22.5 GHz,	130-134 GHz,
406.1-410 MHz,	22.81-22.86 GHz,	136-148.5 GHz,
608-614 MHz in Regions 1 and 3,	23.07-23.12 GHz,	151.5-158.5 GHz,
1330-1400 MHz,	31.2-31.3 GHz,	168.59-168.93 GHz,
1610.6-1613.8 MHz,	31.5-31.8 GHz in Regions 1 and 3,	171.11-171.45 GHz,
1660-1670 MHz,	36.43-36.5 GHz,	172.31-172.65 GHz,
1718.8-1722.2 MHz,	42.5-43.5 GHz,	173.52-173.85 GHz,
2655-2690 MHz,	42.77-42.87 GHz,	195.75-196.15 GHz,
3260-3267 MHz,	43.07-43.17 GHz,	209-226 GHz,
3332-3339 MHz,	43.37-43.47 GHz,	241-250 GHz,
3345.8-3352.5 MHz,	48.94-49.04 GHz,	252-275 GHz
4825-4835 MHz,	76-86 GHz,	
4950-4990 MHz,	92-94 GHz,	

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. S4.5 and S4.6 and Article S29).

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5.556 In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements.

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5.559A The band 75.5-76 GHz is also allocated to the amateur and amateur-satellite services on a primary basis until the year 2006.

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5.560A The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis.

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5.561 In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service.

5.561A In Japan, use of the band 84-86 GHz, by the fixed-satellite service (Earth-to-space) is limited to feeder links in the broadcasting-satellite service using the geostationary-satellite orbit.

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5.562A Transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible.

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United States (US) Footnotes

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US211 In the bands 1670-1690, 5000-5250 MHz and 10.7-11.7, 15.1365-15.35, 15.4-15.7, 22.5-22.55, 24-24.05, 31.0-31.3, 31.8-32.0, 40.5-42.5, 102-105, 116-126, 151-164, 176.5-182, 185-190, 231-235, 252-265 GHz, applicants for airborne or space station assignments are urged to take all practicable steps to protect radio astronomy observations in the adjacent bands from harmful interference; however, US74 applies.

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US297 The bands 47.2-49.2 GHz and 81-82.5 GHz are also available for feeder links for the broadcasting-satellite service.

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US342 In making assignments to stations of other services to which the bands:

13360-13410 kHz,	14.47-14.5 GHz,*	92-94 GHz,
37.5-38.25 MHz,	22.01-22.21 GHz,*	94.1-95 GHz,
322-328.6 MHz,*	22.21-22.5 GHz,	97.88-98.08 GHz,*
1330-1400 MHz,*	22.81-22.86 GHz,*	140.69-140.98 GHz,*
1610.6-1613.8 MHz,*	23.07-23.12 GHz,*	144.68-144.98 GHz,*
1660-1670 MHz,	31.2-31.3 GHz,	145.45-145.75 GHz,*
3260-3267 MHz,*	36.43-36.5 GHz,*	146.82-147.12 GHz,*
3332-3339 MHz,*	42.5-43.5 GHz,	262.24-262.76 GHz,*
3345.8-3352.5 MHz,*	48.94-49.04 GHz,*	265-275 GHz
4825-4835 MHz,*	81-86 GHz,	

are allocated (* indicates radio astronomy use for spectral line observations), all practicable steps shall be taken to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 4.5 and 4.6 and Article 29 of the ITU Radio Regulations).

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USwww In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the Federal Government fixed-satellite service.

USxxx In the band 92-95 GHz, Federal and non-Federal users may operate low power, unlicensed devices. In the band 92-92.3 GHz and 93.2-94.1 GHz, Federal assignments shall operate on a primary basis. In the bands 92.3-93.2 GHz and 94.1-95 GHz, non-Federal licensed systems shall operate on a primary basis and Federal assignments may operate on a secondary basis, except that Federal assignments at the following military installations shall operate on a primary basis: [NTIA will supply the list of large military installations prior to the adoption of the Report and Order].

USyyy The band 75.5-76 GHz is also allocated to the amateur and amateur-satellite services on a secondary basis until January 1, 2006.

USzzz In the bands 81-86 GHz, 92-94 GHz, and 94.1-95 GHz, the radio astronomy service shall not receive protection from other allocated services, except within the maximum coordination distances listed for the following radio astronomy observatories.

Telescope and site	150 kilometer (93 mile) radius centered on:	
	North Latitude	West Longitude
National Radio Astronomy Observatory (NRAO), Robert C. Byrd Telescope, Green Bank, WV	38° 25' 59"	79° 50' 24"
NRAO, Very Large Array, Socorro, NM	34° 04' 44"	107° 37' 06"
University of Arizona 12-m Telescope, Kitt Peak, AZ	31° 57' 10"	111° 36' 50"
BIMA Telescope, Hat Creek, CA	40° 49' 04"	121° 28' 24"
Caltech Telescope, Owens Valley, CA	37° 13' 54"	118° 17' 36"
Five Colleges Observatory, Amherst, MA	42° 23' 33"	72° 20' 40"
Haystack Observatory, Westford, MA	42° 37' 23"	71° 29' 19"
James Clerk Maxwell Telescope, Mauna Kea, HI	19° 49' 33"	155° 28' 20"
NRAO, Very Long Baseline Array Stations	25 kilometer (15.5 mile) radius centered on:	
	North Latitude	West Longitude
Brewster, WA	48° 07' 52"	119° 41' 00"
Fort Davis, TX	30° 38' 06"	103° 56' 41"
Hancock, NH	42° 56' 01"	71° 59' 12"
Kitt Peak, AZ	31° 57' 23"	111° 36' 45"
Los Alamos, NM	35° 46' 31"	106° 14' 44"
Mauna Kea, HI	19° 48' 05"	155° 27' 19"
North Liberty, IA	41° 46' 17"	91° 34' 27"
Owens Valley, CA	37° 13' 54"	118° 16' 37"
Pie Town, NM	34° 18' 04"	108° 07' 09"
Saint Croix, VI	17° 45' 24"	64° 35' 01"

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4. Part 15 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 15 – RADIO FREQUENCY DEVICES

5. The authority citation continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302, 303, 304, 307, 336 and 544A

6. Section 15.257 is added to Subpart C to read as follows:

§ 15.257 Operation within the band 92–95 GHz.

(a) Operation under the provisions of this section is not permitted for equipment used on aircraft or satellites.

(b) Within the 92-95 GHz band, emission levels shall not exceed the following:

(1) The average power density of any emission, measured during the transmit interval, shall not exceed 9 $\mu\text{W}/\text{cm}^2$, as measured 3 meters from the radiating structure, and the peak power density of any emission shall not exceed 18 $\mu\text{W}/\text{cm}^2$, as measured 3 meters from the radiating structure.

(2) Peak power density shall be measured with an RF detector that has a detection bandwidth that encompasses the band being used and has a video bandwidth of at least 10 MHz, or using an equivalent measurement method.

(3) The average emission limits shall be calculated, based on the measured peak levels, over the actual time period during which transmission occurs.

(c) Limits on spurious emissions:

(1) The power density of any emissions outside the band being used band shall consist solely of spurious emissions.

(2) Radiated emissions below 40 GHz shall not exceed the general limits in Sec. 15.209.

(3) Between 40 GHz and 200 GHz, the level of these emissions shall not exceed 90 pW/cm² at a distance of 3 meters.

(4) The levels of the spurious emissions shall not exceed the level of the fundamental emission.

(i) The total peak transmitter output power shall not exceed 500 mW.

(ii) Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to +50 degrees celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

(iii) Regardless of the power density levels permitted under this section, devices operating under the provisions of this section are subject to the radiofrequency radiation exposure requirements specified in 47 C.F.R. §§ 1.1307(b), 2.1091 and 2.1093, as appropriate. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

PART 97--AMATEUR RADIO SERVICE

7. The authority citation for Part 97 continues to read as follows:

Authority: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609, unless otherwise noted.

8. Section 97.303 is revised by adding new paragraph 97.303(r)(3) to read as follows:

§ 97.303 Frequency sharing requirements.

* * * * *

(r) * * *

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(3) No amateur or amateur-satellite station transmitting in the 75.5-76 GHz segment shall cause interference to, nor is protected from interference due to the operation of, stations in the fixed service. After January 1, 2006, the 75.5-76 GHz segment is no longer allocated to the amateur service or to the amateur-satellite

Part 101 of title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 101 – FIXED MICROWAVE SERVICES

9. The authority citation for Part 101 continues to read as follows:

AUTHORITY: 47 U.S.C. 154 and 303, unless otherwise noted.

10. Section 101.101 is amended by adding four new entries in numerical order as follows:

§ 101.101 Frequency Availability

Frequency band (MHz)	Radio Service				
	Common carrier (Part 101)	Private radio (Part 101)	Broadcast auxiliary (Part 74)	Other (Parts 15, 21, 22, 24, 25, 74, 78 & 100)	Notes
*	*	*	*	*	**
71,000-76,000	CC.....	OFS.....	.....	.....	F/M/TF
81,000-86,000	CC.....	OFS.....	.....	.....	F/M/TF
92,300-93,200	CC.....	OFS.....	.....	.....	F/M/TF.
94,100-95,000	CC.....	OFS.....	.....	.....	F/M/TF.

11. Section 101.107(a) is amended by adding four new entries in numerical order as follows:

§ 101.107 Frequency tolerance

(a)* * * * *

Frequency (MHz)	Frequency Tolerance (percent)		
	All fixed and base stations	Mobile stations over 3 watts	Mobile stations 3 watts or less
*	*	*	****
71,000 to 76,000 \9\	0.03	0.03	0.03
81,000 to 86,000 \9\	0.03	0.03	0.03
92,300 to 93,200 \9\			
94,100 to 95,000 \9\			

* * *

\9\ Equipment authorized to be operated in the 38,600-40,000 MHz, 71,000-76,000 MHz, 81,000-86,000 MHz, 92,300-93,200 MHz and 94,100-95,000 MHz bands are exempt from the frequency tolerance requirement noted in the above table.

* * * * *

12. Section 101.113(a) is amended by adding four entries in numerical order as follows:

§ 101.113 Transmitter power limitations

(a) * * * * *

Frequency band (MHz)	Maximum Allowable EIRP	
	Fixed (dBW)	Mobile (dBW)
*	*	*****
71,000-76,000	+55	+55
81,000-86,000	+55	+55
92,300-93,200	+55	+55
94,100-95,000	+55	+55

13. Section 101.147(a) is amended by adding four entries in numerical order as follows:

§ 101.147 Frequency assignments

(a) * * * * *

71,000-76,000 MHz \4\ \5\ \11\ \17\ \19\
 81,000-86,000 MHz \4\ \5\ \11\ \17\ \19\
 92,300-93,200 MHz \17\
 94,100-95,000 MHz \17\

* * * * *

APPENDIX C
LIST OF COMMENTERS

Comments:

The Boeing Company

DMC Stratex Networks, Inc.

Endwave Corporation

Fixed Wireless Communications Coalition

Kauai Economic Development Board

The National Association of for Amateur Radio (AARL)

Pacific LightNet

The Personal Communications Industry Association, Inc.

Wireless Communications Association International

Reply Comments:

Loea Communications Corporation

**SEPARATE STATEMENT OF
COMMISSIONER KATHLEEN Q. ABERNATHY**

Re: Service Rules for Use of the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands, Notice of Proposed Rulemaking.

As technology advances and the pressure to “find” more spectrum increases, commercial and government research efforts increasingly focus on spectrum in upper bands. There was certainly a time when commercial RF interests looked askance at spectrum at 40 GHz, let alone the 70, 80, and 90 GHz bands we examine today. Innovation, technological change, and increasing encumbrances in the lower bands have driven the regulatory process to open these new bands to commercial operations. Over the past few months I have spoken often about the challenges presented by new technologies and the increasingly encumbered FCC-administered spectrum space, today’s decision is the positive outgrowth of the spectrum draught in the lower bands.

As currently conceived the 70, 80 and 90 GHz bands will use “pencil beams” of radio energy to transmit data relatively short distances between fixed sites. In many cases there could be thousands of these “hops” in a relatively small geographic area – but because of the narrow beam it is believed multiple systems can co-exist without interference. This deployment model is unlike anything we have ever seen and may require new thinking on the appropriate licensing approach.

As I have stated before, spectrum management in our age requires that we consider the full panoply of tools that Congress gave us for spectrum distribution: licensed and unlicensed, site-by-site and geographic, large and small service areas, paired and unpaired. Here I strongly believe that this new technology requires a cautious approach to the licensing question. That is, I am not prepared to tentatively conclude that an auction or even licensing is required. I am pleased that the item reflects this approach and I look forward to a full record on this issue with the type of creative thinking that new technologies may require to succeed.

Commercial operations also must share these new bands with federal government spectrum users. However, we have an obligation to ensure that our new licensees are not ultimately surprised to learn that the nature of the federal government uses in a band preclude commercial development. I understand that some of this information regarding government systems is classified, but we must find a way to protect national security while also developing the commercial spectrum resource. I look forward to working with my colleagues at NTIA to ensure the greatest transparency possible in this and other bands.

* * * * *

Thanks to Loea Communications Corporation – the party that petitioned for the rulemaking we begin today, the other innovators in the bands, and the hard work of OET and the WTB, with today’s Notice we begin to open a new spectrum frontier for the American people.

**STATEMENT OF COMMISSIONER
MICHAEL J. COPPS**

RE: In the Matter of Service Rules for Use of the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands, Notice of Proposed Rulemaking.

I want to commend the Chairman, the Wireless Bureau and OET for initiating this proceeding. Today's NPRM begins the process of commercializing around 13 GHz – or 13,000 MHz – of spectrum. We may be dealing with apples and oranges in comparing this spectrum with other bands, but that's as much spectrum as currently occupied by all AM and FM broadcasting, all the television channels, all of the CMRS spectrum, all the way up to the DBS bands. That's a lot of room to cover with one NPRM, so good work.

I'm glad that we leave this NPRM open, with few tentative conclusions. These bands are very different than most of our other bands, and we should keep our minds open. I'm particularly glad to see that we seek comments on where unlicensed operations are feasible. Unlicensed service has had great success elsewhere, and we should do our best to explore this option when we encounter new opportunities.

**SEPARATE STATEMENT OF
COMMISSIONER KEVIN J. MARTIN**

Re: Allocations and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands; Loea Communications Corporation Petition for Rulemaking, Notice of Proposed Rulemaking, WT Docket No. 02-146, RM-10288

I am pleased to approve this item, which initiates a rulemaking to enable commercial use of the 71-76 GHz, 81-86 GHz, and 92-95 GHz bands. As I have previously discussed, the amount of available spectrum is ultimately limited only by technology. *See generally* Separate Statement of Commissioner Kevin J. Martin, *Amendment of Part 2 of the Commission's Rules To Allocate Spectrum Below 3 GHz for Mobile and Fixed Services To Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd 16043 (2001). This item is a perfect illustration of that point. The 71-76 GHz, 81-86 GHz, and 92-95 GHz bands – which have wavelengths of about three to five millimeters – have never before been used commercially, and it was previously unclear how these bands could be used. Now, commercial interests are experimenting with different uses for these bands, and this spectrum may ultimately be used commercially for high-speed wireless local area networks, broadband access systems for the Internet, point-to-point communications, and point-to-multipoint communications. I am glad that, through this rulemaking, we can enable these kinds of commercial uses.

While, at present, the Commission must regard spectrum as a scarce natural resource, I am hopeful that future technological development will reduce this sense of scarcity – by allowing us to use previously unusable spectrum bands and enabling us to use the spectrum we are already using more efficiently. Today's item only increases my optimism.